

Amendments to the Drawings:

The attached replacement drawing sheet makes changes to Fig. 1 and replaces the original sheet with Figs. 1 and 2.

Attachment: Replacement Sheet

REMARKS

Claims 1-16 are pending in this application. By this Amendment, the specification, Fig. 1 and claims 1 and 9 are amended.

The drawings were objected to because the vehicle must allegedly be shown. Although Applicant believes that it is not necessary to illustrate the vehicle, Applicant amends the specification and Fig. 1 in order to broadly illustrate a vehicle 5. It is respectfully requested that the objection be withdrawn.

Claims 1-16 were rejected under 35 U.S.C. §112, second paragraph. By this Amendment, claims 1 and 9 have been amended to recite that the vehicle motor includes a plurality of coils in order to provide antecedent basis for "each coil" in claims 1 and 9. Claim 1 is also amended to clarify that the controller selects one detected temperature. Applicant confirms that the controller of claim 1 selects one detected temperature, which is based on a detected current phase angle. It is respectfully requested that the rejection be withdrawn.

Claims 1-16 were rejected under 35 U.S.C. §102(b) over Matsunaga et al. (Matsunaga), U.S. Patent No. 6,114,828. The rejection is respectfully traversed.

Matsunaga fails to disclose a control device with a temperature sensor that detects a temperature of each coil of the plurality of coils, and a controller that selects one detected temperature detected by the temperature sensor, which is based on a detected current phase angle, wherein torque is reduced when a stalled state is detected and a selected temperature exceeds a restrictive temperature, as recited in claim 1 and as similarly recited in claim 9.

The combination of features recited in claims 1 and 9 achieves various advantages as discussed in Applicant's paragraph [0044], for example. In particular, gradability of the vehicle is assured for a long period of time before the torque-reducing control starts in all the phases. Therefore, the driving performance and a driving feel of a stalled vehicle can be

improved. Matsunaga fails to discuss these advantages or disclose the features recited in claims 1 and 9.

Matsunaga discloses an inverter 4 that comprises six semiconductor switching devices T1 through T6, wherein each switching device T1 through T6 is attached onto a cooling fin on which a temperature detecting thermistor 6 that detects a temperature T_s of each cooling fin is attached (col. 3, lines 43-47).

Applicant first notes that Matsunaga only discloses that the initial value of the junction temperature T_J of each switching device T1 through T6 is estimated from the cooling fin temperature T_s of each switching device T1 through T6 (col. 5, lines 43-48). Matsunaga fails to disclose a temperature sensor that detects a temperature of each coil, as recited in claims 1 and 9.

Matsunaga also fails to select one detected temperature detected by the temperature sensor, which is based on a detected current phase angle, wherein torque is reduced when a selected temperature exceeds a restrictive temperature, as recited in claims 1 and 9.

At step S27, Fig. 2B, Matsunaga calculates a limitation torque to the maximum value T_{JMAX} of the junction temperatures on the respective switching devices T1 through T6 (col. 6, lines 2-5). Matsunaga fails to provide any disclosure with regard to selecting one detected temperature.

Matsunaga then continues at steps S31-S37 by reducing the output torque using a predetermined constant A. In particular, the displacement torque (which increases over time if a phase domain is maintained using a predetermined constant A) is subtracted from the limitation torque (col. 6, lines 22-34). Over time, the output torque of the motor 5 is reduced and the phase domain is varied (col. 6, lines 35-48). Matsunaga again fails to provide any disclosure with regard to selecting one detected temperature. Matsunaga also fails to disclose reducing torque when a selected temperature exceeds a restrictive temperature, as recited in

claims 1 and 9. Matsunaga only discloses reducing torque based on the amount of time by which a phase domain is maintained, which is not the same as reducing torque when a selected temperature exceeds a restrictive temperature.

Accordingly, Matsunaga fails to disclose all the features recited in claims 1 and 9.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,


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Attachment:
Replacement Drawing

Date: December 28, 2006

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